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PATENT
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Satoshi NAKAMURA

Application No.: 09/818,686

Filed: March 28, 2001

For: PRINTED WIRING BOARD HAVING
HEAT RADIATING MEANS AND
METHOD OF MANUFACTURING THE
SAME

) Confirmation No.: 2438
)
) Group Art Unit: 2835
)
) Examiner: Boris L. Chervinsky
)
) **MAIL STOP APPEAL BRIEF-**
) **PATENTS**
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MAIL STOP APPEAL BRIEF- PATENTS

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APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 1.193(b)(1)

Appellant filed a Notice of Appeal in the above-identified patent application on May 15, 2003. Appellant filed an Appeal Brief on July 14, 2003. This Reply Brief responds to the arguments raised in the Examiner's Answer mailed August 19, 2003. This Reply Brief is timely filed within the period for response which extends through Monday October 20, 2003, (October 19, being a Sunday) and is transmitted in triplicate.

Summary of Examiner's Answer

Claims 1 and 15 remain subject to rejection under 35 U.S.C. § 103(a) as being unpatentable over *Christopher et al.* (U.S. Patent No. 6,058,013) in view of *Kamioka* (JP 04-113695). In the Examiner's Answer, the Examiner argues that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the second radiating pattern with larger area as disclosed by *Kamioka* in the structure disclosed by *Christopher et al.* to have larger contact area with the heat radiating plate for sufficient heat dissipation. In support of this argument, the Examiner alleges in, "(11) Response to Argument," that the element 12 of *Kamioka* provide thermal conduction from the heat generating component 8 through vias 6 to the heat dissipating elements 3 and 2, therefore, ... element 12 constitute the heat radiating pattern. In addition, the Examiner also alleges that the electrical insulation property of elements 12 is irrelevant in view of claimed limitations of claims 1 and 15.

Appellant's Reply Arguments

As explained in Appellant's Appeal Brief which is incorporated by reference herein, and are explained in detail below, Appellant respectfully asserts that the Examiner has not established a *prima facie* case of obviousness and, therefore, the rejection is improper. Appellant respectfully submits that the Examiner's Answer misinterprets the teachings of the cited references and fails to properly address the arguments presented in the Appeal Brief. Further, Appellant respectfully submits that the Examiner's assertion to have the element 12 of *Kamioka* (which functions as an electrical insulation) in the structure of *Christopher et al.* is improper to achieve the claimed invention. Furthermore, Appellant respectfully submits that Appellant's

claimed invention overcomes problems and limitations of conventional printed wiring board based on the finding that the problems can be eliminated by the use of two heat radiating patterns where the second heat radiating pattern has a larger area than that of the first radiating pattern.

Specifically, Appellant respectfully notes that the Examiner admits that *Christopher et al.* fails to teach or suggest that “said heat radiating plate and said first radiating pattern have a same area,” as recited in independent claim 1 of the present application. For example, as shown in Fig. 2 of *Christopher et al.*, a heat radiating plate (not numbered) of *Christopher et al.* is mounted under the electronic components 119 and 225 and has an area smaller than those of radiating patterns 203, 227, 121 and 121’. Thus, the Examiner has further relied on *Kamioka*.

However, Appellant respectfully submits that *Kamioka* is totally silent for the problem to be solved in the claimed invention. That is, for example, as described at lines 7-21 of page 3 and further illustrated in Fig. 7, the claimed invention aims to resolve the heat storing problem in a circuit board 102 due to the small specific heat capacity of a copper pattern 20.

In addition, Appellant respectfully submits that it is the frame 3 of *Kamioka* that might be, at best, relevant to the “second heat radiating pattern” because the body 2 of *Kamioka* is the best comparable structure to the “heat radiating means” as claimed in the present application. Therefore, Appellant respectfully submits that it is improper to define the element 12 of *Kamioka* as the “heat radiating pattern,” as claimed.

Thus, at least for the reasons discussed above and in the Appeal Brief, one of ordinary skill in the art would find no teaching to combine the element 12 of *Kamioka* with the structure of *Christopher et al.* Accordingly, Appellant respectfully submits that the rejection of claims 1 and 15 under 35 U.S.C. § 103(a) is improper and should be withdrawn. Also, Appellant

respectfully submits that the rejection of claims 6, 7, 10-13 and 16-22 under 35 U.S.C. § 103(a) is also improper and should be withdrawn at least because of their dependencies upon the respective independent claims 1 and 15 and for the reasons set forth above.

Conclusions

In view of the foregoing, Appellant respectfully requests the reversal of the Examiner's rejections and allowance of the pending claims. If there are any other fees due in connection with the filing of this Reply Brief, please charge the fees to our Deposit Account No. 50-0310.

Respectfully submitted,

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By: 

Robert J. Goodell
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Dated: October 20, 2003

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